

* SWBAT use the momentum equation to solve word problems

Sep 6-2:31 PM

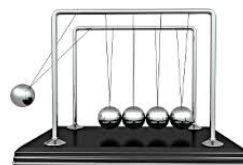
Welcome!!!

SECA Physics
Tuesday 9 December 2014

H. Leslie Grebe

* Pick up:

- whiteboard, marker, eraser
- slip of paper (for later)



Opening Question:

Where do you hear the word "momentum" in everyday life?

TEACHER - ON A ROLL - KEEP GOING
SPORTS - ON A ROLL
DOING WELL

Centering...

Sep 7-7:04 AM

CPP:
Momentum is...

INERTIA IN MOTION

MOMENTUM = MASS \times VELOCITY

$MOM. = m \cdot v$

Bowling ball has a mass of 3 kg and is rolling at 1 m/s. What is its momentum? (kg·m/s)

$MOM. = m \cdot v = 3 \text{ kg} \cdot 1 \text{ m/s} = 3 \text{ kg} \cdot \text{m/s}$

A ping pong ball has a much smaller mass, let's say 0.01 kg (that's 10 grams). If it's going 100 m/s, what is its momentum?

$MOM. = m \cdot v = 0.01 \text{ kg} \cdot 100 \text{ m/s} = 1 \text{ kg} \cdot \text{m/s}$


$MOM. = 500 \text{ kg} \cdot \text{m/s}$
 $v = 0.5 \text{ m/s}$
 $m = ?$

$m = \frac{MOM.}{v} = \frac{500 \text{ kg} \cdot \text{m/s}}{0.5 \text{ m/s}} = 1000 \text{ kg}$

Truck: 1000 kg sitting still
 Skateboard: 1 kg rolling at 5 m/s

Which has more mass? ~~TRUCK: 1000 kg~~
 Which has more velocity? ~~SKATEBOARD: 5 m/s~~

Which has more momentum?
 $SKB: 1 \text{ kg} \cdot 5 \text{ m/s} = 5 \text{ kg} \cdot \text{m/s}$
 $TRUCK: 1000 \text{ kg} \cdot 0 \text{ m/s} = 0 \text{ kg} \cdot \text{m/s}$



Dec 7-7:51 AM

Daisy Cutter

OAS Show-offs #14

(Nova DVD)

What is a physics term used to explain it?

Definition?



How is this connected to ideas that we've encountered?

Dec 5-9:21 AM

Daily 3 Questions

- * Every day except test/project days
- * 3 Questions on the topics of the day
- * Main source of daily points
- * I am happy to give credit when I have no concerns about someone giving or getting help with the answers.

CP Hmwk for Friday:

Worksheet #5

NOTESHEET: WORK, POWER, ENERGY

You can't get your points if you don't have your NAME!!!

Name	Period
1.	
2.	
3.	

Sep 9-7:32 AM

1. What is the momentum of a bowling ball that has a mass of 3 kg and is rolling at 1 m/s?

$$mom = m \cdot v = 3 \text{ kg} \cdot 1 \text{ m/s} = 3 \frac{\text{kg} \cdot \text{m}}{\text{s}}$$

2. Which has more momentum: A large truck sitting still or a skateboard moving slowly?

3. Bernie, whose mass is 70 kg, leaves a ski jump with a velocity of 20 m/s. What is Bernie's momentum?

$$1400 \frac{\text{kg} \cdot \text{m}}{\text{s}}$$

Dec 2-7:55 AM